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IVRS based Student Academic Performance Monitoring System

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Abstract - *In today's competitive world any organization must build flexible communicating systems that adapts easily to evolving requirements of the critical business processes. The IVRS serves as a bridge between people and computer database by connecting the telephone network with the database. After dialling a specified number, and after establishing the connection, telephone user can access the information from anywhere by following an automated interactive voice instruction. The current scenario of student academic performance system is used to eliminate manual intervention in responding to call regarding student related information, which is a time consuming and costly process. Thus, this proposed IVRS system targets to overcome the problems of traditional system which is based on manual efforts to responds to queries about the students. The IVRS uses pre-recorded or computer generated voice response to provide information in response to an input from telephone caller. The input is given by means of touch-tone or DTMF (Dual Tone Multi-Frequency) signal. The sequence of messages to be played is determined dynamically according to an internal menu structure maintained within the IVR application program and the user input. The IVR system consists of simple components like microcontroller and some basic applications interfaced to a PC with small software running in the back-end while the other jobs are performed at the front end.*

Key Words*: *IVRS, Interactive Voice Response System, Students Performance Monitoring

1. INTRODUCTION

This system is introduced to provide overall academic performance of a student to the person who is asking for the same. Just by making a call to a fixed number, this overall process will take place. Making a call connects to a particular organization and their system and retrieves information of the student.

Wireless technology has served in the field of automation since a long time. With the advent of wireless and networking technology, automation is taking place in every sector. The implementation of this project could be achieved by using networking technologies with the support of various wireless technologies such as Bluetooth, DTMF, mobile telephony, etc. Such automated systems deals with providing a network in an environment which links computers peripheral equipment with telephone network. The wireless technology is now days also used to control mains supply operated devices cautiously in real time even when being physically away from the site. But this implementation requires either radio link communication or wired communication to direct the devices to operate according to remote controlling device. Be it wired or radio link communication, each has its own limitations such as complex wire deployment, maintenance, range restrictions, low data rate, high cost, software arrangements, etc.

Here an effort has been made to tackle issues related to manual response to telephonic call by using automated IVRS system which uses DTMF decoder to accept commands from the user. Hence we have implemented the GSM based IVR System. The user do not require dedicated transceiver as the GSM mobile can be used as commanding device. The IVRS system enables user to interact with system which eases the control operation.

1.1 OBJECTIVES

Following are the major objectives of the proposed system.

- To minimize the manual intervention in responding to queries of parents or guardians about their ward
- To develop low cost and easily implementable system
- To design and develop a system which is easily accessible and easily maintainable

2. SYSTEM DESIGN AND IMPLEMENTATION

2.1. SYSTEM ARCHITECTURE:

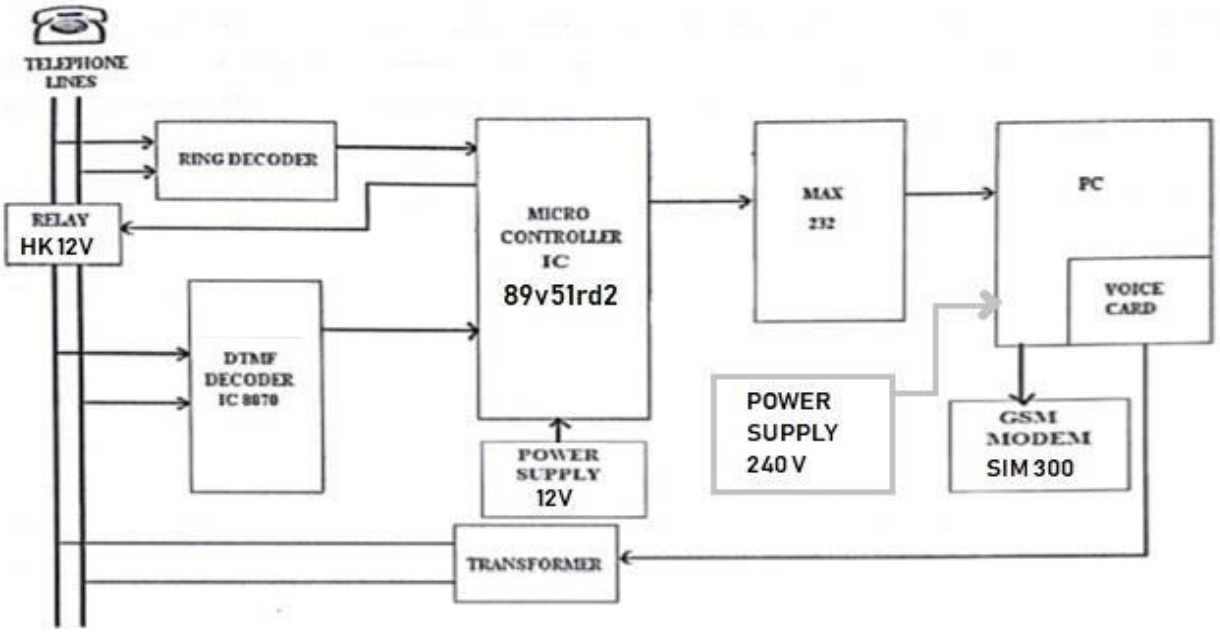

Fig 1. System Architecture

Fig.1 illustrates the block diagram of the proposed system. The major blocks involved are 8051 family of microcontroller, DTMF decoder, Ring decoder, GSM modem, PC, Max232, and relays.

2.2 HARDWARE IMPLEMENTATION

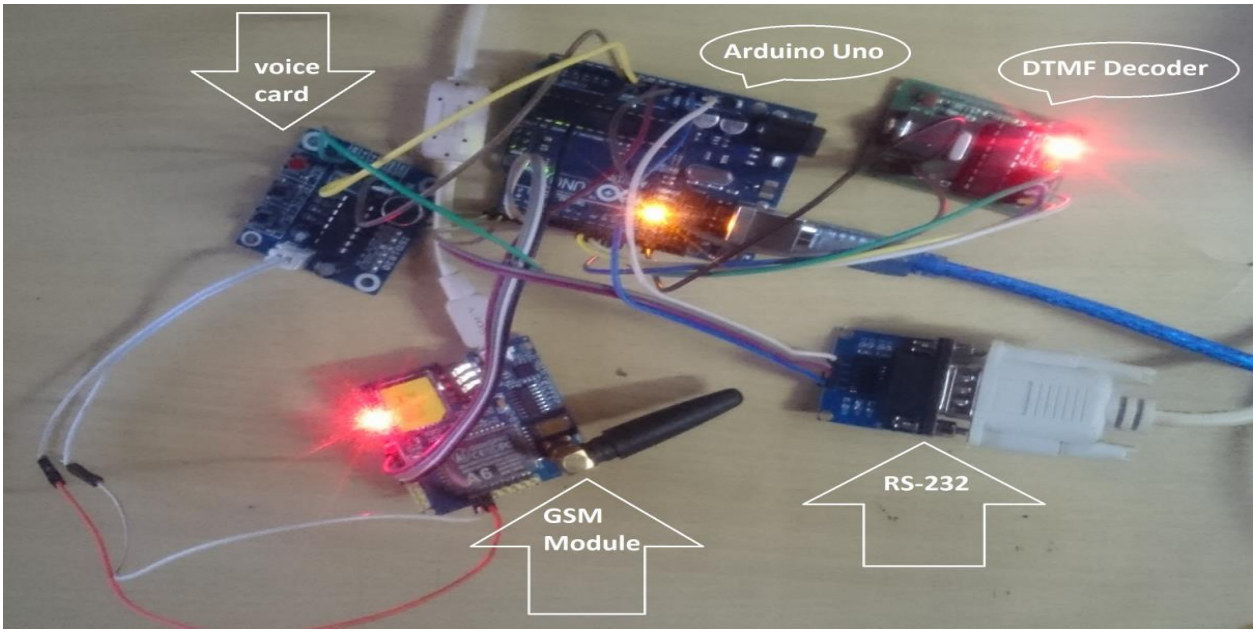

Fig 2. Hardware Implementation

Fig.2 illustrates the pictorial representation of the implemented system.

2.3. METHODOLOGY

Existing System:
As we know current system is based on postal service which means college have to send entire performance report of the student to parents which increases paper work. Similarly, in current system relies on manually responding to telephone calls to address the queries of guardians of students. These methods are time consuming and costly. So to overcome these disadvantages, we have proposed a system which will reduce such unnecessary efforts.

Proposed System:
We are proposing this system to make automation of entire process of current system. In this system parents can get information about their ward by just making a phone call. The phone call will get connected to the system and after authentication of caller and following certain procedures system will send information of respective student to the caller.

2.4. RESULTS
The fig.3, fig.4 and fig.5 shows the login page, home page and import page of the developed system.

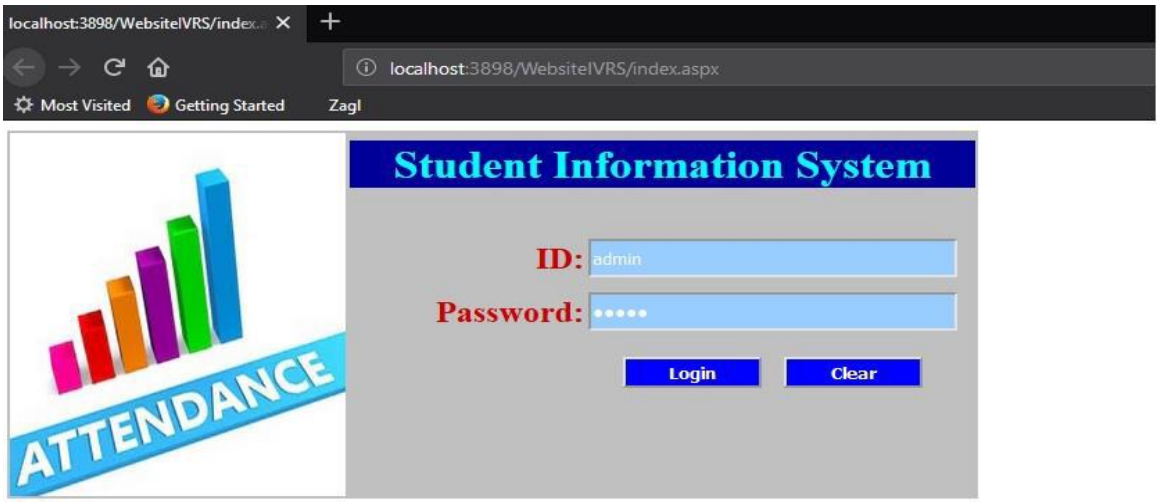

Fig. 3: Project Login Page

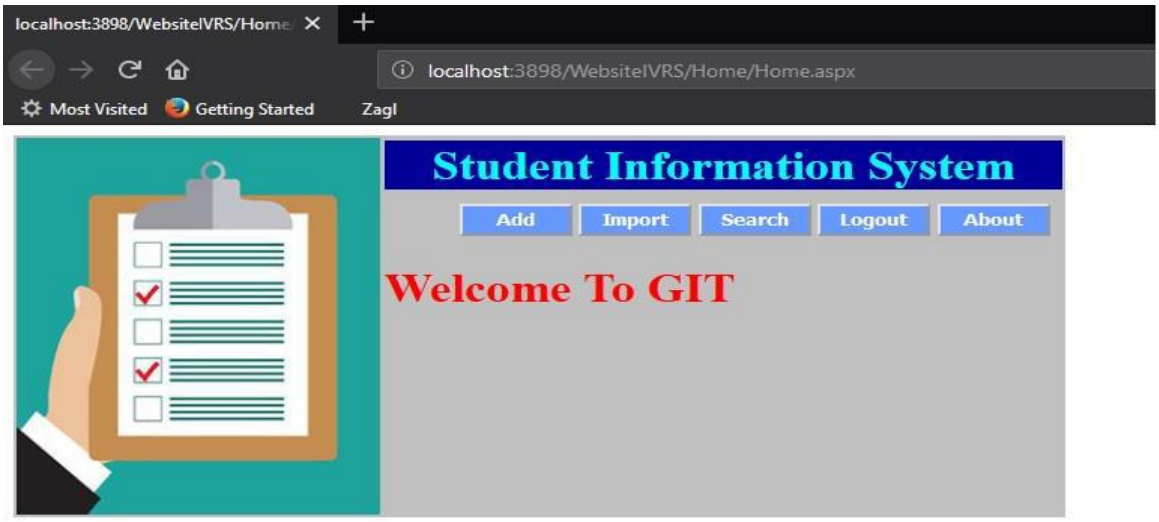

Fig. 4: Project Home Page

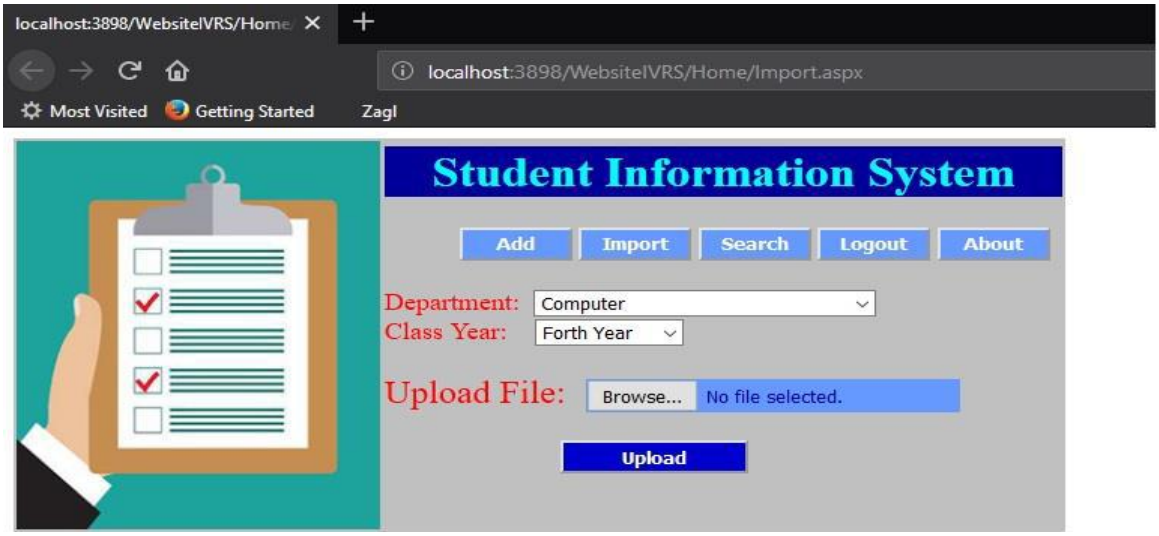

Fig. 5: Project Import Page

3. CONCLUSION

The designed and developed system is easily implementable, accessible and maintainable. Our project demonstrates a low cost implementation of the system and it greatly reduces the information management cost of the organization since the organization need not hire and pay any staff for responding to voice calls. Similarly, this automated system can work for 24x7, which feature is very difficult to have in case of manual system. Since it is an automated system, it is free from manual errors and lethargy.

4. FUTURE WORK

1. In the future, the concept of Interactive Voice Response System can be made available for various smart city developments.
2. It can be used in various transport departments, railways and airports administrations. This gives a fast and reliable response catering to the needs.
3. The end users needs to provide customers with an easily accessible information delievery system providing necessary type of quarries like Information Enquiry, Schedule Enquiry, and Tele ticketing, etc.

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